

09/465131

## **METHOD AND APPARATUS FOR THERMAL PROFILING OF FLIP-CHIP PACKAGES**

### **ABSTRACT OF THE DISCLOSURE**

5 A thermal measurement device for obtaining accurate thermal profiles during flip-chip semiconductor packaging and methodologies for making such devices is disclosed. Particularly, a measurement device comprised of a thermocouple sandwiched between a semiconductor packaging substrate and a semiconductor die. Such a device providing increased accuracy in temperature measurement. The present invention also teaches a packaging substrate assembled with a semiconductor die having an opening in the substrate enabling the placement of a thermocouple such that it is in contact with the die and secured in place. Additionally, methods of constructing the devices of the present invention are disclosed.